

METHOD OF SETTING UP CONNECTIONS IN A COMMUNICATION
ENVIRONMENT, COMMUNICATION SYSTEM AND CONTACT ELEMENT FOR
SAME

CROSS-REFERENCE TO PRIOR APPLICATIONS

[0001] This is a U.S. national phase application of International Patent Application No. PCT/EP2005/000938, filed January 31, 2005, and claims the benefit of European Patent Application EP 04002154.5, European Patent Application EP 04012120.4, U.S. Provisional Patent Application No. 60/574,489, U.S. Provisional Application No. 60/584,698, U.S. Provisional Application No. 60/586,469, German Patent Application DE 10 2004 033 164.2, German Patent Application DE 10 2004 039 697.3, German Patent Application DE 10 2004 052 071.2,

[0002] The present invention lies in the field of communication generally and is directed towards the setting-up of a connection in a communication environment controlled by a communication system between a first node which is allocated to a first contact and a second node which is allocated to a second contact. In particular the present invention is directed towards internet-supported communication in which users act as contact and communication partners. The invention is also directed towards applications in which an individual user contacts web servers or web services of service providers in order to use services there.

BACKGROUND

[0003] Various communication systems, communication applications or also communication programs are known via which a user of a communications network such as for example the internet can communicate with other users. Thus one user contacts the other user. Therefore every user can be considered a contact and both users can be considered contact partners. Examples of such communication applications are e-mail applications, fax applications or also file-sharing programs via which respectively e-mails

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[0004] In order to contact other users or service providers it already known to use contact elements in the form of a so-called “Call Me Button”. These are graphic buttons which are displayed on web pages in internet presences and offer the user a connection set-up to a contact partner by clicking the mouse, in particular via e-mail. In the simplest case a so-called mailto link is also offered as a contact element. Clicking the mouse on the contact element starts an e-mail program on the user’s PC, wherein the contact address of the service provider is entered as receiver address in the “To” field of the e-mail. Optionally, an entry is also automatically made in the “Subject” field. The user can then immediately compose and send an e-mail.

SUMMARY OF THE INVENTION

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[0009] A method is thus proposed by these measures in which an intelligent contact element is used which is unique by virtue of its identification and it is unambiguously checked by the communication system so that only allowed connections result. The connection set-up with such a contact element thus obtains an exclusivity which protects against unintended or even unlawful uses. The contact providing the contact element, i.e. the provider, can be sure that there is no misuse. The contact receiving this contact element, i.e. the receiver, can be sure that he is receiving an exclusive right to connect to the provider and/or use his services. The unambiguous identification of every contact element has a corresponding article or serial number which means that, with every contact element specific properties and third-party rights, in particular licensing rights, copyright, picture rights and associated use, enjoyment and/or marketing rights, can also be connected. Proper use is thus monitored at all times.

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provided by the second contact for the first contact, and if the details contained in the contact data are tested in the communication system, wherein, depending on the result of the test, the communication functions or services for use by the first contact are cleared. It is thus ensured that only services and functions which the provider has released by defining the contact element can be used. The supplied contact elements are provided e.g. for specific contacts, in particular for preferred and/or canvassed users. When creating the contact elements the provider can e.g. predetermine the properties of the contact elements in many different ways. For example he can also define the number and the extent of the provided services and functions related on an individual basis to suit the respective user. Thus the user is granted specific rights, determined via the contact element, for access to services and/or functions. Exclusive user groups can be formed, such as e.g. particular customer groups which receive so-called ServiceBots, or in-house groups which receive so-called CorporateComBots.

[0017] The first contact is preferably a user of the communication system to whom a terminal is allocated which is covered by the first node. The program is a user program which the user runs via his terminal in order to set up contact connections with other contacts via the communication system, wherein the contact element is provided as program object for the program, in particular in the form of a file or of a library. The contact element is defined by these measures as a program object which is tailored to the user program. The user program can comprise e.g. standard applications, such as, say, browser or clients for e-mail or instant messaging. However, the user program may also have been generated specially and exclusively only for the users of the communication system.

[0018] In this connection it is particularly advantageous if the second contact is a service provider and if the details contained in the contact data are predetermined by the service provider. The second node comprises a PC, in particular a server which is connected to the communication system and which is allocated to the service provider. Thus by these measures a connection between the user and a machine (PC, server) is created, wherein on the user's side the machine -just like a contact partner- is also represented by a graphic element. In this connection the contact element is preferably displayed as a graphic

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[0023] Fig. 1 shows the representation of a connection in the form of a two-point contact connection in which the method according to the invention is applied and in which contacts are represented on the desktop by graphic elements, so-called ComBots;

[0024] Fig. 2 shows schematic representations of further variants of contact connections, in particular multipoint contact connections in which the method according to the invention is applied;

[0025] Fig. 3a shows the representation of a system architecture for managing contacts and for establishing contact connections by means of the method according to the invention integrating ComBots;

[0026] Fig. 3b shows the schematic representation of the logical structure of a two-point contact connection;

[0027] Fig. 4a shows the structure and the sequence for a method according to the invention in which a user accesses the so-called ServiceBots of service providers in order to establish contact and to use associated services;

[0028] Fig. 4b shows a flowchart of the process sequence according to Fig. 4a;

[0029] Fig. 5 shows the data structure of a ServiceBot according to the invention;

[0030] Fig. 6 shows the logical structure and the sequence of the method for the production, management and use of the ServiceBots;

[0031] Fig. 7 shows a part-section from the logical structure and the sequence of the method for the production, modification and destruction of ServiceBots;

[0032] Fig. 8 shows the principle of the sequence for allocating the ComBots according to the invention, in particular ServiceBots, from a supplying entity (service provider) to a target entity (user);

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- [0033] Fig. 9 shows the logical structure of a providing entity;
- [0034] Figs. 10a-c show various versions for allocating ComBots, in particular ServiceBots;
- [0035] Fig. 11 shows the target entity in connection with a called communication entity which is formed as webserver of a service provider;
- [0036] Fig. 12 shows the sequence of a stepwise allocation of ComBots, in particular ServiceBots;
- [0037] Fig. 13 shows an invitation e-mail for the offering and provision of ComBots, in particular ServiceBots;
- [0038] Fig. 14 shows the arrangement of ComBots in the form of ServiceBots on the desktop of a user PC; and
- [0039] Fig. 15 shows the collection of ComBots in a so-called ComBotarium.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS


[0040] Figures 1 to 3 illustrate the basic properties of the system architecture of a communication system according to the invention which provides a communication environment in which contacts for communication of any type (e-mail, SMS, telephony, instant messaging, file sharing...) are permanently or at least semi-permanently in contact with each other. To this end special, graphically representable contact elements, so-called Communications Robots or ComBots for short, are provided on the desktop of the computer (desktop) of the respective contact partner.

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[0041] Contact partners can be users in the narrower sense, i.e. natural persons who are registered as users of the communication system. However, contact partners can also be any type of contact entities or communication entities, i.e. also technical entities, such as PCs and PC systems which are part of the communication environment. Webservers which can be reached over the internet and which are integrated in the communication environment are in particular to be named here, in order that users can establish contact with them. In connection with the provision of services the connection between the contact partners “user” and “webserver” is particularly interesting. This version of the invention is later described in more detail with the help of Figures 4-7. Firstly, the principle of the set-up and sequence of the method for the creation of a two-point connection between two users (natural persons) is described:

[0042] Fig. 1 shows in schematic representation an existing contact connection between the first user A and the second user B. The respective desktop DTA of user A and DTB of user B and the respective graphic element are represented in the form of a ComBot which represents the contact with the other user. Thus the ComBot for user B is found on the desktop DTA and vice versa. Both users are logged onto a system still to be described in greater detail (cf. Fig. 3a) so that the users are permanently in contact with each other and are to be seen as contact partners who possibly wish to communicate with each other spontaneously. The connection between the users is also a quasi-permanent contact connection which serves as precursor to the spontaneous set-up of one or similarly several communication connections. To this end the respective ComBot displays the current status of the contact partner by a graphic modification, animation or by comparable measures. For example the ComBot B on the desktop DTA of the user A changes its appearance, such as e.g. its colour, as soon as user B is online.

[0043] The ComBots are not only to be seen as graphic elements and status indicators, but also as functional elements for direct access to the contact partner, in order to send him messages and/or files of any type. A ComBot is thus a contact element and corresponds to a program object which a user program accesses in order to establish direct access via the communication system from one contact to the other contact. The user program can also use or emulate different applications, such as e.g. an e-mail client or an application for a

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peer-to-peer file transfer. Thus for example user A can send a document, say, a text file, picture file or whole directories to the desktop of user B or at least grant him access rights to these files by simply dragging & dropping. To do so, user A simply drags the symbol for the file onto the ComBot B on the desktop DTA. The files and directories exchanged and/or commonly used among the users appear on a communal website TCW managed by the system, preferably within a specific window layout, such as e.g. a double window. The double window represented in Fig. 1 has essentially two part areas, one of which is allocated to each of the two users. Thus all the associated files and directories appear in the part area of the user A and likewise the associated files and directories appear in the part area of the user B. Moreover many further data and information are also provided and managed on the website TCW, in particular the actual contact data (names, addresses, e-mail addresses, telephone numbers etc.) themselves and communication data (date, time, history, type of communication, name of the exchanged files etc.). Thus the website TCW serves in particular to manage and carry out communication between remote contacts, i.e. telecommunication in the broadest sense. The website TCW is therefore also called telecommunications website. The two users can access this direct and without a login procedure via the user program, i.e. by clicking the mouse on the ComBot, or optionally also via a web browser, wherein the user needs to know the URL and be logged on. Access is preferably via the ComBots.

[0044] The shown ComBots are operated and the website TCW used particularly easily by mouse clicks and drag & drop operations on the respective user desktop, i.e. on the personal desktop and/or in the double window presented by the browser. If, for example, user A wishes to send user B a directory with MP3 audio files, then A only needs to drag the icon of the directory on his desktop DTA onto the ComBot B of the other user and drop it there. Thus the system will automatically provide this directory on the website TCW for user B and report this to user B by animating the ComBot A on the desktop DTB. A transmission of directories and/or files takes place in the same manner, i.e. by simple drag & drop, in the opposite direction. This is illustrated by the arrows in Fig. 1. It may be sufficient for the provision of files for user B to merely maintain a link with access rights, but the file in question is not on the website TCW, but in another memory location, such as e.g. on the PC of the offering user A. As soon as user B clicks on the link the file

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is then read by the PC of user A, optionally copied and possibly even compressed and/or stored, converted into another format, at a memory location specified by user B which can be e.g. the TCW or also his terminal PDA.

[0045] Within the window arrangement (window layout) it is shown on the website TCW what files and directories have been provided by what user for use by the other user. The physical memory locations can lie centrally on a server of the system or can also lie decentrally on the respective computers and terminals of the users or on other external PCs, e.g. as webspace with access safeguarded via the LC system. By clicking on the respective ComBot or by accessing the website TCW which can be reached at a specific URL the users can inform themselves of the current status and, if desired, import individual or multiple files as well as whole directories into their area. This means for example that by dragging and dropping onto the webpage of the website TCW user B shifts a file located there in the part area of user A into his part area B. Alternatively or also additionally, this file can be automatically downloaded or copied from the TCW onto the computer of user B. The procedures are described later in more detail with the help of Figures 2a and 2b.

[0046] Fig. 1 illustrates a quasi-permanent contact connection being produced between two users A and B (contact partners), a dedicated website TCW already being provided for this purpose and the current status being displayed on the respective desktops DTA and DTB of the computers and/or the displays of the users' terminals, wherein the respective contact partner is directly accessed by means of contact elements, the so-called ComBots. Thus a direct two-point connection is set up between two contact partners via their ComBots COMA and COMB.

[0047] However, as is shown by Fig. 2, multipoint connections of any type are also conceivable, such as, say, a fan-like point-to-multipoint connection starting from a ComBot COMA to several ComBots COMB1, COMB2 ... COMn, or stellate multipoint connections between a large number of ComBots COM1, COM2, COM3 ... COMn are created. In the cases of the multipoint connections, a ComBot (e.g. COMA or COM1-COMn) can in each case represent a large number of contacts, i.e. a group of

[0048] The individual contacts and also contact groups are displayed within the communication application in the same graphic way, namely by the above-described ComBots or GroupComBots. Thus for every contact a ComBot in the form of a symbol (icon) is displayed on the desktop of the user's PC. For a contact group a GroupComBot, i.e. a corresponding group icon, is displayed on the desktop, which comprises several ComBots and which disintegrates e.g. when double-clicked, into the corresponding individual ComBots. GroupComBots are formed e.g. very simply by dragging and dropping the icons: thus if one ComBot is dragged onto another ComBot and dropped there, a GroupComBot automatically forms which comprises the two individual ComBots. The presentation of contacts in the form of such ComBots has i.a. the advantage that the user immediately has access to contacts and the grouping is very clearly represented. As the user himself is also a contact, namely a contact for the other side, every individual ComBot has as it were as counterpart a corresponding ComBot on the desktop of the other contact. The ComBots are in contact with a contact-management system so that in each case the other contact is informed about the current status of the contact partner. Changes in status on one side are automatically displayed by graphic modification, in particular by an animation, of the ComBot on the other side. Thus there is a quasi-permanent contact connection in each case between two respective contacts which serves to ensure that the contacts are kept up to date and can communicate spontaneously with each other. The ComBots and the GroupComBots formed from them greatly facilitate the establishing of contact and readiness to communicate between users.

[0050] The communication system LC shown in Fig. 3a is structured in an internet-supported way and essentially comprises one or more servers which manage contact data from a large number of users for possible communication and the provision of

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management data. The system LC and by way of example for many users a connection between the two users A and B are schematically represented in Fig. 3a. Referring to Fig. 1, the website TCW provided for the users by the system is also represented here in Fig. 3a. The system LC provides every user with a memory area (e.g. MEM-A for user A). This memory area is located e.g. on the drive of a system server (LC server) or on a data-storage medium connected thereto. In addition to the system-inherent memory areas MEM-A and MEM-B, the users can also use system-external memories, in particular the hard-disk drives HD-A or HD-B of their PC computers or their PDA terminals in order to provide any files and/or directories for other users (contacts).

[0051] If the two users A and B are now in contact with each other via the system LC, a graphic element is located on the desktops of each of their terminals such as e.g. the PC computer or the mobile Personal Digital Assistant PDA, in the form of a ComBot which makes possible direct access to the respective contact partner. User A thus has ComBot COMB on his desktop DTA. Precisely the opposite is the case for user B. The system LC provides a website TCW for both users A and B with a double window in which all the data recorded by the system LC, in particular the contact data of the two users A and B and the management data provided by them, can be displayed. Via this website TCW and by simple operation, in particular by a drag & drop operation, the users can access their own data and the data released by the contact partner from any internet access at any time. As soon as a user changes his contact data (such as e.g. his postal address, telephone number or e-mail address), this is entered by the system LC and an automatic synchronization with the contact partners is carried out so that all the contact partners always have the latest current status of the contact data. Changes and updates can be displayed immediately via the ComBots. The system LC itself has a uniform system time, e.g. the GMT (called General or also Greenwich Mean Time) which is valid for all the nodes of the network. This is particularly important with regard to temporal documentation (histories function). Through the regular, automatic synchronization to this GMT, all nodes remain set to this system time. Thus users can be sent uniform messages, e.g. regarding specific official deadlines and occasions, such as e.g. the Olympics or other sporting, cultural or social events etc.

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[0052] However, the ComBots also serve for direct and spontaneous establishing of contact, whereby a user, such as here user A, clicks on the ComBot COMB of the desired contact (here B) and then starts an application from a communication menu which appears, such as e.g. e-mail, telephony (PSTN and/or VoIP) or SMS. The user program starts the desired application with the contact data stored in the ComBot, such as e.g. e-mail addresses of the two users. Communication is immediately established with the contact partner. The system LC supports the user by proposing the possible and/or preferred communication methods, such as e.g. e-mail, SMS, IM or VoIP. The user profiles and presets of the users themselves managed by the system are taken into account. Likewise, a spontaneous communication can be prompted by simple dragging & dropping. If user A drags for example a WORD file onto ComBot COMB of his contact partner B, the system LC converts this file into a PDF format and transfers the PDF file to user B as an attachment together with a notification e-mail.

[0053] In another example, which is illustrated in Fig. 3a, the user A drags onto the ComBot COMB an MP3 file (symbolized by a star) which is currently located on the hard disk HD-A of user A's PC computer. The system LC immediately starts an upload by transferring this MP3 file into user A's system-inherent memory area MEM-A and displaying this on the website TCW. User B is now advised that A is providing him with a file. The system LC animates ComBot COMA on the desktop DTB of user B, wherein ComBot COMB receives e.g. a speech bubble with the message "MP3 from A for you".

[0054] User B can then immediately access the website TCW via the user program or optionally surf the TCW using his browser and there access his own memory area (right-hand side of the double window) and also the memory area released by A (left-hand side). Either user B leaves the MP3 file (see star) there in A's memory area or user B has the file transferred into his memory area. He can carry this out by dragging & dropping the file symbol, i.e. here by dragging the star from left to right (see arrow). The system LC immediately controls a corresponding file transfer from hard disk HD-A onto a memory area given by user B, here onto hard disk HD-B which is located in user B's terminal, here in his mobile Personal Digital Assistant PDA. The file is transferred via a two-point connection in the form of a peer-to-peer p2p transfer. Many other applications are

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[0055] The system LC causes the contact partners to be connected to each other by ComBots via any communication networks, in particular over the internet. The contacts' ComBots are thus to be seen as network nodes, as illustrated in Fig. 3b. The logical structure of a two-point connection is represented there which connects network node NA, which is allocated to the first user (cf. A in Fig. 1), to network node NB, which is allocated to the second user (B). Each network node comprises both the graphic element of the corresponding ComBot and also the functional elements (contact data etc.) which serve as program object for the user program. The structure of the contact elements here called ComBot and their function as so-called ServiceBots is described in more detail below:

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goods supplier, such as the well-known chemists Douglas. Corresponding ServiceBots are represented in Fig. 4a and given the references SBOT2 or SBOT3. Each ServiceBot represents a unique contact element and is equipped comparably to a ComBot with graphic and functional elements. The graphic element comprises essentially an optical presentation and illustration of the service provider. The functional elements comprise i.a. contact data relating to the provider and various parameters which give the user quick access to the services which the service provider holds ready, and/or which make possible access to communication possibilities which are provided exclusively by the service provider. The term "service provider" is to be understood very generally and covers any type of entity which offers the user services, communication facilities or other facilities through ServiceBots. Accordingly, sponsors or other entities and organizations can also provide ServiceBots in order e.g. to advertise events or products, in particular in order to offer vouchers, bonuses or discounts and the like. Thus e.g. discounted access services for downloading music and video files can be sponsored. Many further applications are conceivable. The graphic layout of the ServiceBots can itself be a special feature which is offered only to specific users who enjoy a privileged status ("gold status"). Or users can download onto their desktops against payment specific ServiceBots or ComBots which have special design and/or functions. Thus ServiceBots or ComBots prefabricated to an exclusive design (limited edition) can also be supplied. The user can then use the design for his existing ComBots. In the example according to Fig. 1 user A could acquire a ComBot with a Disney design and use this design for the ComBot COMA, which represents contact partner B. The functional elements of the COMA can remain unchanged or else be expanded to include additional functions (e.g. for the no-charge dispatch, of a number predetermined by the sponsor, of SMS or the use of PC games etc.).

[0057] The method according to the invention is represented in the form of a flowchart in Fig. 4b which relates directly to Fig. 4a. Therefore reference is made hereinafter to both Figures 4a and 4b: in the example shown here the user selects the ServiceBot SBOT1 of the online auction service provider Ebay. User A is to serve as an example here (cf. also Fig. 1): he is called “Axel Ast” and registered in the LC system with his e-mail-address axel.ast@web.de. In a first step S1 the user drags the SBOT1 by drag & drop onto his desktop DTA and installs it on his PC. In a next step S2 the user program PRG accesses

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the program object, which is defined by the functional elements of the SBOT1, so that a logical network node NA results which is connected to the system LC (part-step 2.1). The user program reports, acting as a client with the data of the node NA, to the server of the LC system, wherein the data come in particular from the contact data contained in SBOT1. As user A is already registered in the system LC, he is immediately authenticated by the system. Moreover it is checked and recognized with reference to the contact data (part-step 2.1) that a connection is to be set up to the service which the SBOT1 represents. In this case a connection to the auction service Ebay is thus produced. This happens in a further step S3 in which the LC server establishes contact with a network node NSP which is allocated to the service provider SP (here: Ebay). The node NSP comprises in particular a webserver or a web service of the service provider SP which provides the offered facilities or at least administratively supports and monitors their use. The node NSP is thus a contact entity which is allocated to the service provider and which the user can use. An entitlement check with the service provider can be dispensed with if user A has already been authenticated by the LC system. Access to the service is thus quicker and more immediate. The user no longer has to log in with his service provider. This becomes very simple in particular if the user registers in the LC system with the same characteristic data as also with the service, e.g. with the same user ID or e-mail-address (here: axel.ast@web.de) or similar characteristic data. This is tested in a step S4. If the result is positive the user then immediately gains access to the user-specific facilities of the service provider. Then the corresponding functions are activated and/or cleared for the user in a step S5. Via the ServiceBot the user has direct access to his service provider and the user area set up for him there. The user does not need to install e.g. any so-called toolbars of service providers.


[0058] In the “Ebay” example described here user A could obtain immediate access to his Ebay account (“My Ebay”) and use all the facilities there. The user thus needs only to click on the ServiceBot SBOT1 and is automatically connected to Ebay and his account there. He can then immediately participate in auctions, monitor his account etc. The user can thus control all user-specific events by ServiceBot. Likewise the incoming events can be immediately displayed to the user by ServiceBot. This happens e.g. by animating the graphic element (here: icon SBOT1).

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[0059] The described method has many advantages: no invitation procedure with confirmation is required in order to be able to use a service. An authorization request via login and password at the service provider can be dispensed with, as authentication is assured via the LC system. In other words: as the LC system knows its users, the provider can trust the accuracy of the LC user identity, so that the actual login procedures at the supplier can be dispensed with. A new convenience function results which can be called "One Click To Service".

[0060] The ServiceBots presented here are prefabricated ComBots with which contact connections controlled by the LC system between users of the LC system and various providers, in particular service providers, are automatically set up. For this, an interface in the form of a webserver or web service is provided between system and provider. The provider (e.g. Ebay) then supplies all his customers who are also LC users via this interface. The service and its provider are represented by a corresponding ServiceBot on the desktop of the user's PC. Any conceivable service functions can be offered to the respective user, in particular access to personal areas (My Ebay), via the ServiceBots. And the provider reaches his customers directly via the interface to the LC system. For this, ComBots and/or GroupComBots can also be applied on the provider side, say on the desktops in the customer care centre. However, on the provider side at least a non-visible LC contact access is applied for each customer. This means that on the side of the provider SP from a logical and purely functional view many virtual contact elements (ComBots) exist, namely one element each for every contact (user, customer). But in terms of system engineering these are contact accounts (user or customer accounts) which the provider runs and which he uses to operate the ServiceBots in order to provide his customers with particular services and/or functions.

[0061] If a user wishes to use a specific service, he uses drag & drop to drag the desired ServiceBot onto his desktop. The ServiceBot contains supplier-specific data (service ID, IP address of the webserver etc.) of the corresponding service provider (e.g. IP address at the Ebay server). The user program, e.g. in the form of an LC client, now sets up a connection to the service provider's webserver with the provider-specific data. The service

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[0062] The principle presented here of equipping contact elements with intelligent function capabilities applies quite generally to every type of ComBot. It thus applies also to normal ComBots, but is particularly advantageous when equipped as a ServiceBot.

[0064] In the first field stands the actual identification ID which gives the unambiguous identity of the ServiceBots and corresponds e.g. to a 32-bit numerical code. This is an identity recognition, article number or serial number which is unique for every ServiceBot, so that every ServiceBot can be unambiguously recognized and can be identified precisely within its uses, in particular in cases of payment procedures and transactions. Thus e.g. specific batches of ServiceBots can be given say in the form of blocks of numbers. This means that e.g. 1 Million ServiceBots with the end-numbers "...0" to "1,000,000" are allocated to a service provider or sponsor. This gives additional security. The

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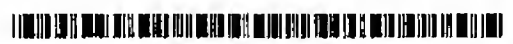
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provider. Exclusively specific rights, in particular access and rights of enjoyment for selected groups, are thus granted via the contact element's CorporateBots.

[0070] In the same way as company employees can be equipped with CorporateBots, special customer groups or also supplier groups can also be provided with exclusive contact elements by corresponding CustomerComBots or VendorComBots. Not only the functionality of the contact elements is of importance. The graphic appearance is also of great importance at least for customers. If e.g. only a few contact elements which are particularly expensive in terms of graphics are divided among a small customer group, these contact elements can acquire a value of their own as typical collectibles. Think e.g. of ServiceBots which are produced and distributed by Porsche or to their order with exclusive logo and design.

[0071] A further special feature of the intelligent contact elements presented here is also the flexible predeterminable linking of graphic elements with functional elements. Thus e.g. a ComBot or also ServiceBot can be designed in the form of the well-known Disney figure "Mickey Mouse" (graphic elements) and have specific animation properties (functional elements). These are predetermined in the parameters PAR and could be e.g. graphically and acoustically animated forms of expression, such as e.g. crying, laughing, smiling, cursing etc. However, these animation properties, i.e. functional elements, are independent of the specific form of the contact element, i.e. independently of the graphic elements. Accordingly, the functional elements could also be transferred to another form (e.g. Donald Duck).

[0072] The production and use of the ServiceBots is represented in Fig. 6. The principle described here also applies to ComBots generally. An environment with a central database 6, with an entity 7 for producing ServiceBots (a so-called factory), with an entity 8 for handling ServiceBot services and for running the user accounts (so-called user management) and with an entity 9 to safeguard the handling of ServiceBot services (a so-called clearing post) is provided to use the ServiceBot. The factory 7 is the entity, post or unit which produces the ServiceBots and optionally destroys them. Further processes can also be carried out there which are described in more detail later. The user

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administrator entity 8 itself serves to handle the payments and run accounts, in particular the user accounts. Accounts of transaction partners, advertising partners, sponsors etc. can also be run there. The clearing post 9 is an entity, post or unit which checks and protects the transactions to be carried out. The precise operation of the individual elements becomes clear from the following description:

[0073] All existing ServiceBots are stored in the database 6, each in the form of its own file. The database 6 thus has a memory space for every existing ServiceBot.

[0074] According to Figure 6 the factory 7 is the only entity is able to modify the ServiceBot files in the database. Only the factory 7 can overwrite or delete the information allocated to the ServiceBots. The user administrator entity 8 and the clearing post 9, on the other hand, can only read the data of the database 6. In another, not represented, embodiment the user administrator entity 8 and the clearing post 9 are also authorized to modify the data in the database 6. The user administrator entity 8 is thus the interface with the owners of the ServiceBots, (e.g. with user A, cf. Fig. 1). Here an owner can see how many ServiceBots he has and commission transactions. The user administrator entity 8 can, however, also manage information relating to the service providers, such as e.g. the characteristic data SP (cf. Fig. 5) and account data. The clearing post 9 serves to monitor, check and handle the ServiceBots' transactions.

[0075] A transaction according to the invention i.e. a payment procedure carried out by means of a ServiceBot, is now described with the help of Figure 6:

[0076] User A has an online account with the user administrator entity 8, which also comprises a bank, with which his ServiceBots are run. As already described, the ServiceBots can be used for the most varied applications, thus also for payment procedures in online shops. In the example represented here in Fig. 6 the user wishes, using such a ServiceBot which is also formed as digital monetary unit and corresponds to a monetary value W (cf. also Fig. 5), to buy over the internet e.g. an audio CD from an online shop which the provider (merchant) SP operates. User A instructs the bank to transfer the required amount to an account of the trader SP (step a). The value W is stated

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e.g. in the form of so-called WebCents, which correspond to precisely one Eurocent. In the shown example, the ServiceBot has been produced as a credit with the value W of 2000 WebCents, which corresponds to precisely 20 Euro. The product offered by the merchant SP, here the said audio CD, costs e.g. 15 Euro. To pay for the audio CD, the user A instructs the bank (via the user administrator entity 8) and the clearing post 9, to transfer an appropriate number of WebCents, namely 1500, from the account of A to the account of the merchant SP. The bank sends the clearing post 9 the ID number of the ServiceBots and the number, i.e. the accounting value, of the WebCents to be transferred and the name of the previous owner (user A) and the name of the future owner (dealer SP).

[0077] The clearing post 9 now asks the database 6 to check whether the quoted ID number also actually corresponds to a ServiceBot which comes from the provider SP and whether the value W is greater than or equal to the quoted number of corresponding WebCents. For data security, the ID number can e.g. be issued according to a specific pattern or scheme (pseudo-random) and only the clearing post 9 can also check at this point whether the quoted ID numbers fit into the use scheme. The clearing post 9 also checks whether the ServiceBot formed as credit also actually belongs to user A. For this e.g. the history HIS stored in the data field 4 is read out (cf. Fig. 5). With the help of the parameters PAR the clearing post 9 can carry out yet further checks.

[0078] Thus e.g. the expiry date of the credit (ServiceBot) can be checked if it has one. If the ServiceBot is provided for the purchase of only specific products the clearing post can acquire additional information through the bank about nature of the purchase, and compare this information with the corresponding parameter PAR.

[0079] When addressing a query to the database 6 the clearing post 9 preferably accesses the transaction history (data field HIS) of the ServiceBot in question. The history is checked for plausibility, i.e. it is checked whether the history indicates that A is the lawful owner of the WebCent in question.

[0080] If the result of the check by the clearing post 9 is negative, the transfer of WebCents is stopped. If the result of the check is positive, the clearing post 9 instructs the

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factory 7 to transfer the corresponding WebCents from A to SP (step d). In step e the factory 7 then transfers the corresponding data into the database 6. Alternatively the transfer takes place by means of the user administrator entity 8. The clearing post 9 now informs the bank 8 that the transaction has been successfully concluded (step f). Finally this information is relayed by the bank to A and SP (step g). If the clearing post 9 or the bank 8 are authorized to modify the data of the database 6, the clearing post 9 or the bank 8 can also carry out the corresponding transfer of the data in the database 6, instead of the factory 7. In this case the factory 7 is not involved in the transfer of the WebCents.

[0081] Fig. 7 illustrates how ServiceBots can be created and destroyed. The principle described also applies to ComBots generally:

[0082] The ServiceBots are created in particular by suppliers and sponsors SP or produced to their order, in order to offer the users particular services and functions. The operator of the system LC acts almost as a mediator between suppliers and users. For this, not only must the user data be managed by the system but also data about the provider and sponsors SP, such as e.g. their names, addresses, account details, contractual conditions with the mediator etc. This administration can also take place centrally in the user administrator entity 8. If a supplier or sponsor SP wishes to have new ServiceBots produced, the factory 7 receives the order. This happens via the user administrator entity 8 (step a) which instructs the factory 7 to create ServiceBots with the properties predetermined by the sponsor SP (step b). The factory 7 accesses the database 6 and generates in this corresponding new ServiceBots, i.e. a unique data record for each ServiceBot (step c). Each new ServiceBot has a unique identification (ID in field 1, cf. Fig. 5) which can have the form of an encrypted serial number or the like. The sponsor is also named (SP in field 3). The ServiceBot can also be provided with a value (W in field 2), a history (HIS in field 4) and optionally with several parameters (PAR in field 5). In the last step d the management 8 informs the sponsor SP that the new ServiceBots have been produced and delivers them. This happens by transferring the created files to the sponsor SP in question.

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[0083] Because the ServiceBots are each provided according to the invention with an unambiguous identification (ID in field 1, cf. Fig. 5) and with additional information, in particular the owner (field 3) and the history (field 4) and further parameters (field 5), falsification or misuse is made much more difficult. Because additional information has been provided, the ServiceBots can be used for particular marketing purposes, in particular for advertising, sponsorship, discount campaigns or the like. The ServiceBots can be selectively produced for promotions run by a specific sponsor or for specific campaign periods (summer coupon) etc. With the help of the additional information, in particular the transaction history, various statistical information about the ServiceBots and their use can also be collected. The ServiceBots are thus special versions of the intelligent ComBots presented here. Both the ServiceBots in particular and the ComBots in general have the described data structure with the data, information and details embedded therein, in particular with an unambiguous identity recognition.

[0084] The process of providing and allocating the above-described intelligent ComBots, in particular ServiceBots, is schematically represented in Fig. 8:

[0085] The process starts from an offering entity COE which in particular also offers services for communication and which is also called “communications offering entity” below. This entity COE corresponds in the case of offered services to the respective service provider SP (cf. Figs. 4-7). The offering entity COE can also correspond to any user (e.g. user B in Figs. 1-3) or the operator of the LC system (cf. Fig. 3a) who wishes to offer other users communication functions. The offering entity COE wishes to make an offer to a target entity TE, also called “target entity” below, which enables the target entity TE to communicate according to the parameters defined by the offering entity COE. The target entity TE generally corresponds to a user (e.g. user A, cf. Figs. 4-7) who is then intended to avail himself of the offer. To this end, the offering entity COE allocates to the target entity TE a communication means COM which corresponds to the described contact element, namely the intelligent ComBots, in particular ServiceBot. This allocation is represented in Fig. 8 by the arrow 1. From a technical point of view the COM can be allocated to the target entity TE by sending at least a part of the COM via the network N. The network N is preferably part of the communication system (see system LC in Fig. 3a),

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[0086] As represented in Fig. 9, the supplying entity COE contains addressing means ADR, building means BM and control means CM. The addressing means ADR contain information on the basis of which the entities can be identified. Such information includes names, addresses, e-mail addresses, telephone numbers, fax numbers, numbers of SMS sets and the like. The addressing means ADR can be used by the offering entity COE for various purposes, in particular for the applications described here in relation to the definition of communication and contact elements COM for the target entity TE. To define and create these COM elements the offering entity COE first selects, using the addressing means ADR, information which indicates an entity COE selected as target entity TE. The COE then uses the building means BM to create the COM elements. The elements COM comprise at least an embedding of information which identify the TE such that the created elements COM are unambiguously allocated to this target entity TE. Where the COE aims to use standardized and/or prepared COM contact elements, the building means BM provide models or templates for the COM which contain standardized communication parameters as predefined parameters. By implementing information which identifies the target entity TE (user), personalized contact elements COM are produced at the user. In order to implement the contact and communication parameters therein as the supplying entity COE wishes, the building means BM provides functions for defining and embedding the parameters.

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customers or at least potential customers of the offering entity, thus of the provider or sponsor SP. However, an individual, namely a user of the system LC who would like to offer an intelligent ComBot to another user, also comes into consideration as an offering entity COE. The embodiment example shown in Fig. 9 for an offering entity COE includes the addressing means ADR and even also the building means BM and control means CM. However, it may be enough if at least one of the means ADR, BM and/or CM forms part of the supplying entity COE.

[0091] Fig. 10a shows that the allocation of a contact and communication element COM to a target entity TE can be designed such that the element COM is transferred as a whole to the target entity TE. As a result the target entity TE then contains the whole of the element COM. Figs. 10b and 10c illustrate embodiments in which the whole of the COM element is not completely contained in the target entity TE. In these examples the target entity TE contains a part COM' of the COM element. The COM element is formed by combining the part COM' with a second part COM'' which is contained in the offering entity COE or a central computer system SER. In the shown examples the offering entity COE is a service provider (sponsor) and the computer system is a webserver SER of this service provider. At least a part of the contact element (ServiceBot) is held ready on this webserver. Thus it is possible that a part COM'' of the COM contact element lies on a server SER which forms e.g. the part of a database. Accordingly the COM elements in the form of combinations COM' and COM'' can use the resources on the server and thus also be equipped with data which are not, or are supposed to be, available at the target entity TE. These include i.a. also statistical data which concern the behaviour of the user when using the COM, such as e.g. calling and access times, frequency, addresses, in particular URL and/or IP addresses, of visited servers, websites or webpages etc. It is also possible to define only the graphic properties of a ComBot in the first part COM' and the functional properties in the second part COM''. Thus the user has only the data for the graphic version or the design of the ComBot, thus the COM', stored locally on his terminal and can modify the design if necessary. The data for the operability of the ComBot, in particular authorizations, profile data for services and animation data for the animation of the ComBot however lie as COM'' on the offering party's server (cf. Fig. 10c). The offering party thus has central control over the essential functionalities of the

ComBots or ServiceBots provided by him. The management of the data COM'' becomes even more secure and data maintenance, in particular updates of authorizations and functions, becomes clearly simpler. Conversely, it is also conceivable that the function data COM'' are stored and installed on the user terminals and the graphic data COM' are stored and centrally managed on the offering party's server. This is then advantageous e.g. if the offering party wishes to offer and supply mainly specially designed ComBots which have the same basic functions but are differently designed in terms of graphics. Thus the file COM'' could be stored on the user's terminal which defines basic functions for the animation of ComBots, such as e.g. laughing, crying, running, sitting, standing etc. The COM' files on the offering party's side define the form of the ComBot, thus e.g. a representation as "Mickey Mouse" or another as "Donald Duck". By combining both files an animatable ComBot is created in the respective form (e.g. "Mickey Mouse"). If the offering party wishes to supply specific users with a special ComBot, e.g. in the form of "Bad Man" then he only needs to issue a correspondingly new COM'' file to the user. The new ComBot would then have the new form of the "Bad Man" but the same basic functions as "Mickey Mouse" or "Donald Duck". It is not necessary to produce and supply a completely re-defined ComBot.

[0092] Fig. 11 illustrates the case in which the target entity TE has an individual independent terminal (stand-alone), such as e.g. a personal computer, a mobile telephone or a fixed-network telephone etc. The contact and communication offer is conducted to this via the COM element. The offer is displayed by a graphic element (icon) on the desktop of the terminal of the target entity TE, namely in the form of the described ComBot and/or ServiceBots. A connection to a called entity CE is produced via the network N by actuating such an element, i.e. by clicking on the mouse on same or by drag & drop operations. This entity CE corresponds to the called user (contact partner B) described already with reference to Fig. 1 or the webserver described with reference to Fig. 4a of the service provider. The types of data embedded in the intelligent contact elements COM (ComBots or ServiceBots) are e.g. audio data (speech, sounds, music) and/or video and picture data and can be used to create corresponding acoustic or visual information, such as e.g. in the following cases:

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[0099] The invention has been described with reference to so-called ComBots and ServiceBots which represent intelligent contact and communication elements and are suitable in particular for user-friendly direct internet-supported communication between contact partners. However, the invention additionally covers also the most varied communication types and networks to form a communication environment in which users can spontaneously contact each other and communicate directly and securely and have exclusive use of offered services and functions.

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